



Simple & Scientific

pabe Basic User Manual

In order to operate the pab® Basic system you need to:

- 1) Install the pob® Basic program
- 2) Connect hardware parts
- 3) Set up user and patient data in pob® Basic program

These steps are described in detail in the chapters 1-3 below.

Once the pab® system is ready, you can start testing your patients/clients.

Instructions for various tests can be found in the pab® Manual for Standard Muscle Tests".

If you encounter any problems with running the program please contact:

support@pressureairbiofeedback.com





pab® Basic - General information

The **pab**® (Pressure Air Biofeedback) Pro Set is used for muscular function diagnosis. It consists of a **pab**® Basic System (measuring device and software) and inflated TOGU training devices, which are required for a measurement. The software must be downloaded as described below in Chapter 1

pab® Basic parts included:

Parts	Pcs	Description		
pab® Basic device	1			
USB cable	1			
Tube	1	pab® Basic System		
Inflator needle	1			
Connector	1			
TOGU Bodyroll Senso (colour amethyst)	1			
TOGU Throw Ring (colour amethyst)	1			
TOGU Dynair Ballkissen XL Senso (colour amethyst)	1	Devices		
TOGU Senso Ball 23cm (colour amethyst)	1	Devices		
TOGU Balance Cushion (colour amethyst)	1			
Straps, black with numbers	2	Accessories		
Ball pump	1	Accessones		
pab® Basic User Manual	1	Maguala		
pab® Manual for Standard Tests	1	IVIALIUAIS		







1. Installation - pab® Basic

Please notice:

If you have previously installed an older **pab**® version on your computer, please uninstall it and delete all related files before downloading the new one.

To download the new pab® software program, go to following website:

www.pressureairbiofeedback.com

- Go to "Downloads" and select "Program Download".
- Click on the "pab® Setup" icon to download.



Follow the easy 9 steps as shown below:





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🕄 Setup - PressureAir	X
License Agreement Please read the following important information before continuing.	
Please read the following License Agreement. You must accept the terms of this agreement before continuing with the installation.	
Pressure Air Biofeedback by Dr A.W. Pienaar Ph.D. Software End User License Agreement Copyright © 2008-2012 by Dr A.W. Pienaar Ph.D. Software <u>http://www.pressureairbiofeedback.com</u> All rights reserved.	A III
THIS SOFTWARE IS PROVIDED BY THE AUTHOR (AND CONTRIBUTORS WHERE APPLICABLE) "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL	Ŧ
 I accept the agreement I do not accept the agreement 	
< Back Next > Ca	ancel

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]
Setup - PressureAir			
User Information Please enter your information.			
User Name:			
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Organization:			
PAB			
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4. Enter User Name & Organization. Then Select - Next icon.

3. Select - I accept the agreement.

Then Select - Next icon.

5. Select - Next icon.





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eting the PressureAir Setup the installation of PressureAir, Setup must restart ter. Would you like to restart now?
the installation of PressureAir, Setup must restart ter. Would you like to restart now?
tart the computer now
restart the computer later
Finish

9.
Select - Yes, restart computer.
Select - Finish icon.

The pabe Basic Program is now installed on your computer.





2. Connecting the **pab**® Basic System parts

This chapter describes how to connect the hardware parts which are neccessary to run the **pab**® System. You will receive the **pab**® Basic with the tube and inflator needle already attached, so you only have to connect the **pab**® measuring device via USB cable with your computer (step 4).

1) pab® Basic system hardware parts



The **pab**® Basic system includes the following hardware parts:

- 1 pab® Basic Device with one tube
- 1 Tube, gray
- 1 Inflator needles, metal with connector for tube
- 1 Connector, black with blue rings
- 1 USB cable, black

2) Connecting the Inflator needle

Insert tube into the connetion part of the inflator needle..



3) Connecting the tube

Connect the tube with the **pab**® Basic device by attaching the connector. Make sure the tube is fitting tight into connector. When pulling on the tube it must not come.







4) Connecting USB cable

The **pab**® Basic device features a small USB port. Connect the USB cable to the **pab**® Basic device and then to your computer.



5) Disconnecting Tube

In order to detach the tube from the connector (inflator needle and **pab**® Basic device), press the blue ring of the connector downwards. This will release the tube and it will come off easy.





3. pab® Basic Program Set up

Once the **pab**® program is installed as described in Chapter 1, this icon shall appear on your desktop.



Connect pab® Basic device to your computer before starting the pab® program.



After the **pab®** Basic device has been connected to the computer, double-click the Pressure Air icon and a **pab®** Login window shall appear:

1) LOGIN

Mme	Simple & Scientific
pressure air biofeedback	Program : PressureAir Version : 5.5.3.2041 User : user OS : Windows 7 Ultimate OS Version :

- Enter "admin" for User and "admin" again for Password.
- Click Login to open your **pab**® program.
- The **pab**® program can now be operated.





2) pab® Program and Settings



The **pab**® Program can be operated with the buttons in the top tool bar. The buttons have the following functions:

- **Setup**: The language can be chosen and the name of the organization/company can be entered here.
- **Testers:** All testers, who operate this program can be registered with this function. Testers are all persons, eg. employees of a practice or organization, that use the **pab**® Program for testing patients or clients.
- **Patients:** All persons (patients, athletes, or other clients) who are being tested with **pab**® can be registered with the function **Patients.**.
- **Devices:** This function is only necessary if the inflated TOGU training devices are to be calibrated with a different value than 0 mbar. It is not necessary for the standard tests, which are described in the "pab® Manual for Standard Muscle Tests".

Perform

- **Test:** Tests are performed using this function. Recommendations for various tests are described the "**pab® Manual for Standard Muscle Tests**".
- **Results:** Test results which have been previously saved can be viewed with this function.
- About: Shows information about program version and system data.

The following describes how to enter data and operate the **pab**® Basic program. Please note that the values and settings below are only a recommendation.





<u>Set Up</u>

🕘 TOGU - PressureAir v5.5.4.2042 Basic		
Setup Setup Testers Patients Devices Perform Test Results	About	Exit

1- Select the **Setup** icon on **toolbar** for general setup and the Setup window will appear.

🍪 TOGU - PressureAir v5.5.4.2042 Basic	
Edit Save Gancel	Exit
TOGU	7
Email p.cavallini@togu.de	
Language	
	Mme ab

- 2- Select the **Edit** icon to change the setup settings.
- 3- Enter a name which can choose yourself under Name.
- 4- Enter your appropriate email address.
- 5- Select the **language** for your **pab**® to display.
- 6- Select the **Save** icon to keep your setup settings.
- 7- Select the Exit icon to exit Setup.





<u>Testers</u>



1- Select the Testers icon on toolbar for general setup and the Testers window will appear.



- 2- Select the **New** icon to insert a new tester.
- 3- Enter the **name** and **surname** of the tester.
- 4- The selection field **User level** allows to define for each tester the functions that can be used.
 - Level 2 = all functions can be accessed
 - Level 1 = only patients data can be entered and tests performed
 - Level 0 = only tests can be performed

At least one of the testers must have "Level 2" in order to be able to access all functions in **pab**®.

- 5- Enter an **Employee** number or user code for the tester.
- 6- Change Login details for the new tester when logging into pab® Basic.
- 7- Change **Password** to Testers specific password.
- 8- Ensure the **Enabled** box is checked so that new login and password details change.
- 9- Select the **Save** icon to save the new tester.
- 10- Selecting the Edit icon you can edit tester's details or select the Delete icon to delete testers.
- 11- Select the **Exit** icon to exit Testers.





Patients



1- Select the Patients icon on toolbar for general setup and the Patients window will appear.

1	TOGU -	PressureA	ir v5.5.4.20	042 Basic										_ 🗆 🗙
		New		Edit	te	Save	G - Garcel		- first	Previous	>	Next	Last	Exit
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		Cosby	_	Bill		02.04.1976	▼ 38 Yea	rs 3 Months	Gender	- Height	cm	Body Mass Kg		
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64														
									*					pab

- 2- Select the New icon to insert a new patient.
 Patients are defined here as every person who is being tested with the pab® (this can also be a healthy athlete). This term serves for simplification.
- 3- Enter the patients **Surname, Name, Date of Birth, Gender** (drop down arrow), **Height** (using a comma to separate decimal numbers) and **Body Mass**.
- 4- Use the drop down arrow to select whether the patient is active or inactive. (Active = 30 minutes of continuous exercise like brisk walking, cycle, swim, gym, etc. x3 per week. Inactive = less than what is required for active).
- 5- Enter **the identification number** of the patient.
- 6- Enter the **telephone number** of the patient.
- 7- Select the **Save** icon to save the patient.
- 8- Selecting the **Edit** icon you can edit patient's details or select the Delete icon to delete patients.
- 9- Select the Exit icon to exit Patients.





Devices



Please note that this function is <u>not</u> required for the standard tests, which are described in the **pab**® Manual for Standard Muscle Tests".

This function should be used only if you want to calibrate with other values than 0 mbar or to double check the recommended calibration value of 0 mbar (see **pab**® manual for standard muscle tests).

1- Select the **Devices** icon on **toolbar** for general setup and the Devices window will appear.



2- Select the correct **pab**® device for calibration, e.g. Device 1 Black.



- 3- Remove the inflator needle with the tube from the valve of the TOGU training device and then pump some additional air with the ball pump into the TOGU training device.
- 4- Check if the desired pressure value has been reached (eg. 50 mbar) by connecting the TOGU training device with the **pab**® Basic System and repeating Step 2.
- 5- The calibration value can always be set at 0 mbar (recommended) by only inserting the inflator needle without the tube into the TOGU training device (see **pab**® manual for standard muscle tests).
- 6- Select the Exit icon to exit Devices.





Perform Tests



The following describes the entry fields and options for performing a test. Recommendations for particular tests are shown in the **pab**® manual for standard muscle tests. Apart from that, it is also possible to perform tests according to own testing schemes.

1- Select the **Perform Test** icon to perform a muscle strength test and the Perform Test window



- 2- Select **Synch Graphs** to activate strength graphs. Select **Strength Bars**, if you want to see only bars, without a graph.
- 3- Select the **New** icon to enter patient to be tested.
- 4- Use the **drop down arrow** to select the patient to be tested or select **search** button to find patient.
- 5- Use the drop down arrow to select **Test Type** (e.g. Air grip, Pull Ring, etc.).
- 6- Enter Duration of the test, standard is 10 seconds. However, you can select any time duration depending if you want to test maximum muscle strength (3-5sec), muscle strength and endurance (10sec), muscle endurance (30-60sec). If you enter 0, pab® will run indefinitely unless you select the start/stop icon (no. 12) to terminate the test.
- 7- Enter 5 mbar in **Start When Above**. This means that the test will only start when air pressure exceeds the **5 mbar** threshold as soon as patient exerts force and will measure force output from 0 sec to end of test. If you select 0 mbar, the test will start immediately without the patient exerting force and strength/force calculation will not be accurate.
- 8- Select Device 1 Black.
- 9- Use the first drop down arrow to select Left or Right.
- 10- Use the second drop down arrow to select anatomical site (e.g. hand, hip, etc.) to be tested.
- 11- Additional information can be entered if you click on the **Notes** box.
- 12- Select Start icon to start the test.
- 13- After completion of the test, select the **Save** icon to save the test data.
- 14- If not satisfied with the test select the Cancel icon and redo test.
- 15- When testing is finished, select **Exit** icon to exit Perform Test.





Results Option 1



1- Select the Results icon on toolbar for general setup and the Results window will appear.

O PAB - PressureAir v5.5.4.2042 Professional					- 🗇 🗙
	Edit Delete	- Save	View Graph Intergrated Graph and Data	View Raw Data	Exit
Doe Joh Date Time 2014-07-15 Test Type Air Grip Tested By Pienaar Comments Bilateral hai	D: 44:17 AM	strength at end of test.	Device 1884.teff Hand Total Work - 6736,24 Total Work - 6736,24 Max. Strength - 24,33 Rel. Strength - 24,83 Aog. Work - 13,45 Device 1 Green Right Hand Total Work - 990,28 Max. Strength - 38,99 Rel. Strength - 139,72 Avg. Work - 19,80	> 201+07-15 100+147 > 101+07-15 100+157 > 07-15 100+157 07-15 100+157 44 07-15 100+157 44 07-15 100+157 44 07-15 100+157 44 07-15 100+157 44 07-15 100+258 44 07-15 100+258 84 > 201+07-10 11:17:22 > 201+07-70 01:15:17 > 201+07-70 01:15:17 > 201+07-70 01:17:12 > 201+07-70 01:17:12 > 201+07-70 01:15:16 > 201+07-70 01:15:10 > 201+07-07 01:15:10 > 201+07-07 01:15:10 > 201+07-07 01:15:10 > 201+07-10 11:5:21 > 201+07-07 01:5:10 > 201+06:18 02:35:21 <th></th>	
Code /	Surname	First Names	I.D. No		
CLA0001	Clarke	Dino			
DOE0001	Doe	John	12345678		
DUF0001	Duffy	Karl	-		
GRA0001	graham	jason	010179		
PIE0001	Pienaar	Andre'	630814		
PRE0001	Pretorius	Louise			

- 2- Select the **patient** tested
- 3- Select the appropriate **test results** from the patient tested. It is possible to select more than one test at a time, all of which will be presented in the same chart.
- 4- Select the Edit icon to activate the **Comments** box.
- 5- Type your comments in the comments box.
- 6- Select the Save icon to save your comments.
- 7- Select the Print Results icon to open the Print Results window (see window below).
- 8- Select Print icon to print test results.
- 9- Select Close icon to exit Print Results.

8		Preview	- 0 ×
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8	P	esults	^
	DOE0001 : Doe John I.D. 12345678		
	Comments '2014-08-29 12:58:18 PM hand grip test R hand, sit test elbow 90 deg flexion		
	Date / Time	Tested By	
	2014-08-29 12:58:18 PM	Dr Andre Pienaar	
	Test Type Air Grip Device 2 Black	Picht Hand	
	Device 2 black	Right nand	
	150 120 120 120 80 00 40 20		
	0 1 2 3 4	5 6 7 8 9 Seconds	
	Total Work Done Maximum Strength 0,00 kg / force 0,00 kg / force	Relative Strength Average Work 0,00 kg force / kg 0,00 kg / force	
Page 1 of 1			12.50 DM
			▲ 10 util 2014-08-29

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Results Option 2



1- Select the Results icon to view test results and the Results window will appear.

0			PAB - PressureAir v5.5.4.2042 Pro	B - PressureAir v5.5.4.2042 Professional – 🗇 📕		
	dit Delete	Cancel	View Graph View Graph and Data	View Raw Data Print Results	Exit	
Doe John Dade Time 2014-07-15 10:44: 17 AM Test Type Air Grp Tested By Pensar Comments Blateral hand grip test. left injured writst losing strength at end of test.		 Device 18ack Line Hand Total W Max. Str. 4 Anya, W Device 1 Green Right Hand Total Work - 9920,28 Max. Strength - 28,99 Red. Strength - 19,72 Anya, Work - 19,80 	▶ 0 014-07-15 0:4:17 AM ▶ 2014-07-15 0:4:27 S IM ▶ 2014-07-15 0:4:27 S IM ▶ 2014-07-15 0:4:07-15 ▶ 2014-07-15 0:3:37 AM > 2014-07-15 0:3:37 AM > 2014-07-15 0:3:37 AM > 2014-07-15 0:3:33 AM > 2014-07-10 1:17:32 AM > 2014-07-10 1:15:27 AM > 2014-07-07 0:3:33 RM > 2014-07-07 1:3:42 AM > 2014-07-07 1:5:42 AM > 2014-07-07 1:5:42 AM > 2014-07-10 1:5:42 AM > 2014-07-10 1:5:42 AM > 2014-07-10 1:5:42 AM > 2014-06-18 0:3:35:22 PM			
Code /	Surname	First Names	I.D. No			
CLA0001	Clarke	Dino	-			
DOE0001	Doe	John	12345678			
DUF0001	Duffy	Karl	-			
GRA0001	graham	jason	010179			
PIE0001	Pienaar	Andre'	630814			
PRE0001	Pretorius	Louise	-			

- 2- Select the patient tested.
- 3- Select the appropriate test results from the patient tested.
- 4- Select or tick the integrated Graph and Data box (to activate graph and data together).
- 5- Select View Graph icon to view graph and data together (see window below).



- 6- Insert comments in the Comments box
- 7- Select Print icon to print test results





Results Option 3



1- Select the Results icon to view test results and the Results window will appear.

PAB - PressureAir v5.5.4.2042 Professional - D ×					
	Edit Delet		View Graph Intergrated Graph and Data	View Raw Data	Exit
Doe Jo Date Tim 2014-07- Test Type Air Grip Tested By Pienaar Comment Bilateral	ohn e -Is 10:44:17 AM y y s hand grp test. left injured writs	r Andre tosing strength at end of test.	Cevice Life Red Mand Tor 56,24 Ma 4 24,33 A,88 A,45 Cevice I Green RopH Hand Total Work - 9920,28 Red. Strength - 139,72 Avg. Work - 19,60	▶ 2014-07-15:10-44:17:AM ▶ 2014-07-15:10-44:17:AM ▶ 2014-07-15:10-42:07:AM > 2014-07-15:10-42:07:AM > 2014-07-15:10-42:07:AM > 2014-07-15:10-42:07:AM > 2014-07-15:10:32:15:7AM > 2014-07-15:10:32:15:7AM > 2014-07-16:10:32:15:7AM > 2014-07-16:10:32:35:MM > 2014-07-10:11:73:2AM > 2014-07-70:23:43:BM > 2014-07-70:23:43:BM > 2014-07-70:23:24:10:M > 2014-07-70:22:24:10:M > 2014-07-70:22:24:19:M > 2014-07-70:23:24:10:M > 2014-07-70:23:24:10:M > 2014-07-70:23:24:10:M > 2014-07-70:23:24:10:M > 2014-07-10:10:23:22:2PM > 2014-07-10:22:26:PM > 2014-06-18:02:35:13:7M > 2014-06-17:07:02:26:PM	
Code /	Surname	First Names	I.D. No		
CLA000	1 Clarke	Dino	-		
DOE000	Doe Doe	John	12345678		
DUF000	1 Duffy	Karl			
GRA000)1 graham	jason	010179		
PIE0001	1 Pienaar	Andre'	630814		
PRE000	1 Pretorius	Louise	-		
65					
					Man

- 2- Select the patient tested.
- 3- Select the appropriate test results from the patient tested.
- 4- Select **AND UNTICK** the integrated Graph and Data box (to activate full page graph).
- 5- Select View Graph icon to view full page graph (see window below).



- 6- For zoom-in function, select from top, left click + hold, and drag cursor to bottom (see white box area) and zoom-in graph.
- 7- Select Print icon to print test results of normal graph or zoom-in graph.
- 8- Click zoom-out icon to return to normal graph.





Isometric training with pabe

- 1- To use pab® as a biofeedback exercise system, follow same 12 steps as in Perform Test (page 5), but do only a 3 sec maximum isometric strength test. This is to set up target training zone (See Example Below).
- 2- After 3 sec max. test, select target training zone between ±70-85% of maximum strength force (See Example Below and enlarged box).
- 3- Select Cancel, because it is not necessary to save maximum test and target zones.



- 4- Select New to open the Perform Test window again (see window below)
- 5- Select Duration and enter nil (0), for unlimited time to train.
- 6- Select Start to begin training session.



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- 7- A standard isometric exercise rehabilitation session with **pab**® will be as follows:
 - A: Set 1 is done at the selected 70-85% target training intensity for 6 seconds, repeated 6 times with 10 second rest breaks in between (6 x 6 x 10 principle). See example of one set, below.
 - B: After completion of a set, rest 2 minutes.
- --(2)-Save Print Synch Gra Input Graphs Display Window 🔸 🔸 5,000 Se Max. 281 0 fotal Worl kg / force 300 6x6 second isometric contractions (arrows) 280 240 220 0.00 200-180sup 160-140 120-100 80 60-40 -Device 1 Black 1 -**H** *(***2** 6 - i all () 03:43 l 5x10 second rest breaks (arrows)
- C: Do Set 2 and Set 3 in the same way. (see **pab**® isometric training graph below).

Definitions:

Strength: The graph on the chart represents the pressure in millibar, which is created inside the TOGU Training device by the patient's application of force.

The boxes **Max Strength** and **Rel. Strength** show the force with Kilogram as unit. 1 Kilogram equals 9.81 Newton.

Total Work:	The total amount of strength calculated in kg/force (measured every hundreds of a second) from 0 seconds to the end of the test.
Maximum Strength:	the maximum or highest peak strength achieved in kg/force, while doing the strength test.
Relative Strength:	the total work done (see total work above), divided by the patient/athlete's body mass. This indicates the strength/weight ratio of the patient/athlete in kg/force per kg body mass.
Average work:	the total work done (see total work above), divided by the total calculated strength measurements.

You will find instructions how to test various muscle groups in the **pab**® Manual for Standard Muscle Tests.